Local Programs Procedures

LPP 95-10 1995-96 HBRR Program - Operating Procedures and Guidelines

Reference: Highway Bridge Rehabilitation and Replacement (HBRR) Program

Effective Date: December 18, 1995 Approved: (Original signed)

Assistant Program Manager
State & Local Project Development Program

The purpose of this Local Programs Procedure (LPP) is to define the "1995-96 HBRR Program - Operating Procedures and Guidelines." Management for this program was transferred from the Engineering Service Center (Structures) to the Office of Local Programs (OLP) on the effective date of July 1, 1995. As a result, several changes have been made involving the roles of these two offices in the implementation of the HBRR program. The procedures to be used in the selection and programming of projects, however, remain basically the same as last year.

EXISTING PROCEDURES

In accordance with the 1994-95 HBRR guidelines, Federal participation for Preliminary Engineering (PE) costs on HBRR projects, except seismic retrofit, shall be limited to 25% of actual construction costs.

NEW PROCEDURES

In accordance with the new policy, Federal participation of PE costs on HBRR projects, except seismic retrofit, shall be limited to $75,000.00, or 25 percent of the estimated construction cost, whichever is greater. Exceptions may be granted with prior written approval from OLP due to clearly-identified, unusual, environmental and/or hydraulic problems.

For the 1995-96 HBRR program, attached are the new "Operating Procedures and Guidelines," and the "Procedures to Initiate and Implement a Project."

Attachments

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These operating procedures and guidelines for the 1995-96 HBRR program have been reviewed by the "City/County/State HBRR Advisory Committee." These procedures are very similar to those procedures used for the 1994-95 HBRR program. The program will be administered as follows:

1. Each local agency will be allowed two bridge replacement projects and two miscellaneous projects. Each local agency will be allowed one or two bonus projects for selecting and replacing one or two projects with a Bridge Deficiency Rating (BDR) greater than 100. A local agency may also select one additional bonus replacement or miscellaneous project in each six-month period (Oct-Mar and Apr-Sept) in which they have no over-extended projects (over-extended projects are those where it has been over three years since the funds were reserved for construction, or Preliminary Engineering (PE) was obligated by an FNM-76, and construction funds have not been obligated). An agency may elect to substitute up to two seismic retrofit projects for two of the allowed replacement projects.

   Miscellaneous projects are either rehabilitation, seismic retrofit, or painting projects.

   A Replacement Project shall be Structurally Deficient or Functionally Obsolete (SD/FO), shall have a Sufficiency Rating (SR) below 50, and shall be selected from bridges shown on the Federal Eligible Bridge List (EBL). The list is available from the Caltrans District Local Assistance Engineer (DLAE).

   A Rehabilitation Project shall be SD/FO, shall have a SR below 80, and shall be selected from bridges shown on the SD/FO list. The list is available from the Caltrans District Local Assistance Engineer.

   A Seismic Retrofit candidate may be any local agency bridge with seismic deficiencies except one-lane, timber, or flat-slab bridges.

   A Bridge Painting candidate may be any local agency steel bridge with a paint code of four or five or equivalent.

2. Bridge replacement project candidates must be selected from the ten most deficient bridges of an individual agency's inventory on the EBL. Bridges with an Average Daily Traffic (ADT) less than 200 which do not have a legislative "Resolution of Need" as required by the California Transportation Commission (CTC) Resolution will not be considered one of the agency's ten most deficient bridges. Also "historically significant bridges" may be exempt from being considered part of an agency's ten most deficient bridges if so requested by the local agency. Bridges with a "Historical Significance Code" of four or five are not eligible for this exemption.

3. The amount of eligible work will be determined on a project-by-project basis. All major deficiencies of a bridge must be addressed in any rehabilitation project. However, design exceptions may be approved by local agencies for some deficiencies when adequately justified. Any seismic upgrading work (that is performed in conjunction with a rehabilitation project) will be funded as part of the rehabilitation and will not be funded as a separate or concurrent seismic retrofit project. Any major structural deficiencies which cause a bridge to

be posted must be corrected on any project. Steel sections which are seriously corroded must be repaired or replaced before cleaning and painting. Required repairs will be included in the participating items for project funding. The bridge must have enough useful service life remaining to justify the cost of the project. If structural repairs are a significant portion of the project costs, the project will be considered a rehabilitation project. Cost comparisons will be required to demonstrate that rehabilitation is more cost effective than replacement.

4. Bridges selected as seismic retrofit candidates by the local agency will be reviewed to determine if they warrant further analysis. If warranted, Structures Local Assistance will field review the selected bridges with the local agency and recommend funding for preliminary engineering as indicated by the field review to the Office of Local Programs (OLP). Local agencies will be required to present their proposed retrofit design at a Caltrans seismic retrofit strategy meeting for concurrence that the design is necessary, effective, and economical before proceeding with the final plans, specifications, and estimates (PS&E).

5. Replacement and rehabilitation projects funded from the HBRR program will have a match rate of 20.0 percent local agency and 80.0 percent federally funded. Seismic retrofit projects and paint projects will be funded by HBRR funds transferred to the Federal Surface Transportation Program (STP) with an 11.47 percent local agency match. The maximum participating project cost for a paint project shall be $4.0 million.

6. The Low-water Crossing Program will continue for local agencies. Two million dollars will be available for low-water crossing projects this year. Projects on the "on-system" or "off-system" routes are eligible. For further details, the funding criteria is shown in the Attachment 2. Projects will be funded with a match rate of 20 percent local funding and 80 percent Federal funding. The deadline for submitting projects to the Headquarters OLP through the DLAE for consideration is March 1, 1996.

7. The Rail Replacement Program will also continue as last year with a total of $5.0 million authorized for the program. The funding criteria for further details is in the Attachment 1, and basically the same is the deadline for submitting applications to Headquarters OLP through the DLAE by March 1, 1996. The funding will be through STP with a match of 88.53 percent federally and 11.47 percent locally funded.

8. The Special Bridge Program is approved for continuation during the 1995-96 fiscal year. Any local agency which has no more than one over-extended HBRR project in our project status will be eligible to select a "special" noneligible bridge from their inventory for replacement or rehabilitation. These bridge projects will be funded by HBRR funds transferred to the STP program, so they will not be required to meet the Federal HBRR funding eligibility requirements. However, the local agency funding match will be 20 percent locally and 80 percent federally funded. These bridge replacement or rehabilitation project candidates would need to have some special deficiency (which is of extreme importance to the local agency but which is not adequate to make the bridge eligible for the desired HBRR funding). Detailed selection and funding criteria are described in the Attachment 3.

9. Projects selected should be scheduled to have right-of-way certified and construction funds obligated within three years of their notification of reservation or approval of initial PE obligation of funds, unless a specific extension is requested by the local agency and

approved by OLP. The OLP will consult with the HBRR advisory committee for input on these extensions as needed. Funding for projects in the 1995-96 fiscal year will be on a first-come, first-served basis.

Federal participation for bridge approach roadway shall be limited to the minimum necessary to make the facility operable, but it will not exceed 60 meters and 120 meters at each abutment for on- and off-system projects respectfully.

Federal participation for PE costs on HBRR projects, except seismic retrofit, shall be limited to $75,000 or 25 percent of the estimated construction cost, whichever is greater. Exceptions may be granted with prior written approval from OLP due to clearly identified, unusual, environmental and/or hydraulic problems.

Any proposed HBRR project with an estimated construction cost in excess of $8.0 million must be reviewed and approved by OLP prior to obligating funds. The OLP may consult with the HBRR advisory committee for input prior to approval of any project with a cost greater than $8.0 million. The contingency provisions for HBRR projects shall continue at five percent of the approved engineer's estimate with a minimum contingency of $5,000 per project.

The local agency must provide adequate staffing to administer the construction contract on all HBRR projects. Federal regulations in Section 635.105 of Title 23 CFR require the State Highway Agency to ensure that local-agency administered projects receive adequate supervision and inspection. Where the local agency elects to use consultants for construction engineering services, the local agency shall provide a full-time employee to be the engineer in responsible charge of the project. The engineer in charge may be a retired annuitant or other experienced engineer on a full-time or limited-term appointment as a civil service employee of the local agency. The engineer in charge may be working on more than one project during the course of his/her employment. A consulting engineer with a long-term retainer contract, to act as city engineer, may be considered as an employee of the city. A city or county is allowed to perform engineering services for other cities and counties.

Local agencies will certify that they have complied with all State and Federal procedures upon completion of the project and will be monitored through process reviews conducted by the State.

Attachments (3)

HBRR Barrier Rail Replacement Program
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Top priority is to replace obsolete barrier rail on bridges with long life expectancy. If the structure is structurally deficient or functionally obsolete, it should be upgraded under the present rehabilitation program when SR < 80, or replaced, in its entirety, if conditions and costs warrant.

Except for those eligible bridges which may be expected to remain in use for several years, do not replace barrier rails on structures which would remain below the American Association of State Highway Transportation Officials (AASHTO) minimum standards for bridges to remain in place. The involved work should require very little, if any, environmental or right-of-way work. Design exceptions or other funding sources should be used for complex approach rail sites. The standard design length for bridge approach guard rails is 19 meters.

Any barrier rail candidate must be identified on the Maintenance Report (SI&A) as (Code O) "Inspected feature does not meet currently acceptable standards."

The Barrier Rail Project will be funded under STP similar to the seismic and paint programs.

Barrier rail replacement candidates will be prioritized based on the following formula. Local agencies must submit applications for their barrier rail replacement candidates through the District Local Assistance Engineer to Headquarters Office of Local Programs' HBRR Program Manager before March 1, 1996. A priority list will be established within 30 days of this deadline. The application for funding must include all data necessary to complete the priority formula. Each local agency shall be entitled up to two (2) barrier rail projects per year.

Description And Evaluation Of Priority Factors

Total Bridge Rail Priority Points = $F_1 + F_2 + F_3 + F_4 + F_5 + F_6 - F_7$

F_1: Bridge Rail Type - Among the concurrent types of rails which are coded as 0 in the OSM&I database, some are considered to be less effective than others. Listed below are the assigned points (ten points maximum per project - if one side is good, project applies to bad side only - if project is for two sides with different points, use average):

F_1 = 10 points: no bridge rail, or lightweight timber rails
F_1 = 6 points: lightweight concrete post or metal baluster, Tuthill, or equal
F_1 = 3 points: lightweight concrete window (Todd rail), unreinforced masonry, metal beam or lattice, or equal
F_1 = 0 points: all other rail types

F_2: Consequence of Penetration -

F_2 = 6 points: bridges over an area of moderate or heavy public use (i.e., main road, street or railroad, playgrounds, parking lots, etc).
F_2 = 0 points: otherwise.

F_3: Inadequate Approach Rail System - Points are given for inadequate approach guardrails, the approach guardrail to bridge rail connections, and the approach guardrail terminals (five points maximum per project - if it varies, use average of rails to be replaced):

F_3 = 1 point: inadequate approach guardrail transitions
F_3 = 3 points: inadequate approach guardrail
F_3 = 1 point: inadequate approach guardrail terminal

(Two-way bridges less than 18.3 meters wide should have an adequate approach guardrail system at all four corners).

F_4: Accidents - All accidents involving the bridge rail, bridge ends and approach guardrails in the last 5 years are counted. One point is given for each Property Damage Only (PDO) accident while 5 points are given for each fatal or injury accident.

F_4 = 5 points: x (fatal injury)
F_4 = 1 point: x (PDO)

(Total F_4 points will be the sum of both items)
If doing only one side, use accidents involving the rail to be replaced.

F_5: AADT/Lane - This is a measure of the number of conflicts on the bridge. The most critical case is at a volume/capacity ratio of 0.50 (equivalent to 4,000 AADT/Lane, (Annual Average Daily Traffic/Lane) on 2-lane, 2-way roads and 8,000 AADT/Lane on multi-lane roads). Points are given as follows:

On 2-Lane, 2-Way roads:

F_5 = 0 points: less than or equal to 800
F_5 = 1 point: between 800 and 1,600
F_5 = 2 points: between 1,600 and 2,400
F_5 = 3 points: between 2,400 and 3,200
F_5 = 4 points: between 3,200 and 4,000
F_5 = 5 points: greater than or equal to 4,000

On Multi-Lane roads:

F_5 = 0 points: less than or equal to 1,600
F_5 = 1 points: between 1,600 and 3,200
F_5 = 2 points: between 3,200 and 4,800
F_5 = 3 points: between 4,800 and 6,400
F_5 = 4 points: between 6,400 and 8,000
F_5 = 5 points: greater than or equal to 8,000

F_6: Site Conditions - This rating factor is affected by many variables such as vertical alignment, horizontal alignment, bridge width, or access roads being close to the bridge. For each variable that is slightly worse than the design standard, add 1/2 point. For each variable that is significantly worse than the design standard, add 1-1/2 points. The points for F_6 shall be as follows:

F_6 = 0 points: site conditions are excellent
F_6 = 1 point: site conditions are good
F_6 = 2 points: site conditions are fair
F_6 = 3 points: site conditions are average
F_6 = 4 points: site conditions are poor
F_6 = 5 points: site conditions are critical

The maximum number of points for F_6 on any bridge shall be 5.

F_7: Potential for future bridge replacement (reduction) - Top priority is to replace obsolete barrier rails on bridges with long life expectancy:

F_7 = 10 points if BDR >100
F_7 = 6 points if BDR > 90
F_7 = 3 points if BDR > 80
F_7 = 0 points if BDR < 80.

ATTACHMENT 2

Bridges to Replace Low-water Crossings*
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1) The program will be limited to $2.0 million per year. A maximum of $1 million may be expended at any one site. Expended funds will be deducted from the local share of the Federal HBRR fund.

2) Funds may be expended for "on-system" or "off-system" projects.

3) These projects will require the legislative body of the local agency to adopt a resolution which finds that the specific low-water crossing replacement project is more critical to the local economy and traffic service than any of the ten most deficient bridge replacement projects in their jurisdiction.

4) A "Low-water Crossing Replacement Project," if selected, will constitute one of the agency's HBRR replacement project for the year.

5) Candidates for funding must be submitted by the local agency through the District Local Assistance Engineer to the OLP HBRR manager before March 1, 1996. A priority list will be established within 30 days of this deadline.

6) Eligible Bridge projects will be prioritized based on the following formula:

$$PIN = \frac{(ADT) \times (L) \times (C)}{1.61\ (E)}$$

ADT = Average Daily Traffic (must be documented)

L = Length, in kilometers, of most viable alternate routing of traffic when low-level crossing is closed due to flooding.

C = Arithmetic mean number of days per year a public low-water crossing site has been closed over the last five years.

E = Agency's requested amount of HBRR participation in thousands and limited to the maximum amount of $1 million (i.e., E is limited to 1,000). If the project is high enough on the priority list to receive funding, E becomes the amount of funds the agency will receive (i.e., if E = 750, and the project is high enough on the priority list, it will receive $750,000 of HBRR funds).

PIN = Priority Index Number
Higher Number = Higher Priority

7) The OLP will review this program each year to determine its need and validity.

(See next page for footnote asterisk)

ATTACHMENT 2

Bridges to Replace Low-water Crossings*
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*The definition of low-water crossing to be used for this program is:

Low-water crossings include public road waterway crossings other than bridges where construction improvements have been made in the stream, river or lake bed to provide a firm surface for vehicles to travel across the water course. They provide passage to traffic most of the year during periods of ordinary stream flow but are impassable to traffic during periods of high water.

ATTACHMENT 3

HBRR Program Special Bridge Projects
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1. Local agencies will be limited to selecting one special bridge project per agency for the life of the Intermodal Surface Transportation Efficiency Act (ISTEA).

2. The special bridge projects will be funded by HBRR funds transferred to the STP program. Therefore, these projects are not required to appear on the Federal Eligible Bridge List (EBL).

3. The local agency funding match ratio will be 20 percent locally and 80 percent federally funded.

4. Special bridge project candidates are bridges which have "special" deficiencies, which are of extreme importance to the local agency, but which are not eligible for the desired HBRR funding.

5. Therefore, these projects will require the legislative body of the local agency to adopt a resolution which finds that the specific special bridge project is a higher priority project than any of the ten most deficient bridge replacement candidates in their jurisdiction.

6. The candidates selected must be reviewed and approved by the District Local Assistance Engineer in consultation with FHWA.

7. The local agency must select a replacement candidate from their list of ten most deficient bridges, if they have any, prior to selecting their Special Bridge project candidate (in the same fiscal year).

8. A local agency will not be eligible to select a special bridge candidate if they have more than one over-extended HBRR project.

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1. Local agency, per HBRR guidelines, identifies their desired bridge projects and, through the District Local Assistance Engineer (DLAE), informs the Headquarters Office of Local Programs (OLP) Area Engineer of their project selection.

2. If local agency wishes Structures Local Assistance (SLA) to participate in their field review, they should contact SLA directly. SLA will participate in the field review if requested to do so by the local agency and then only if staff resources are available.

3. After the field review, local agency submits a "Request for Authorization" form through the DLAE to the OLP Area Engineer. Copies of this request form will be transmitted by DLAE to SLA for information. This request form must be complete to the extent necessary to determine program compliance (scope, cost data, type selection and field review form, etc.).

4. If SLA has concerns/questions regarding the proposal (e.g., cost, type selection), SLA will contact the local agency directly in an attempt to resolve these questions/concerns. The results of that attempt will be submitted to OLP.

   If SLA does not provide comments to OLP within ten working days, OLP will assume SLA has no comment regarding the agency's request.

5. Issues that cannot be resolved by the OLP Area Engineer will be referred to the HBRR Program Manager in OLP, who will review the issue with SLA and make the final decision for the project.

6. OLP Area Engineer initiates FNM-76 and obligates the funds.

7. OLP Area Engineer through DLAE will notify local agency of "Authorization to Proceed" with Preliminary Engineering (PE) and funds reserved for subsequent phases (right of way [R/W], construction). Copies will be forwarded by OLP Area Engineer to SLA for information.

8. Local agency proceeds with PE.

9. SLA will not review local agency plans, specifications, and estimates (PS&E) unless requested by the local agency and then only if staff resources are available. Reviews will consist of a one-time cursory review with comments and/or recommendations provided. Local agencies will be responsible for the PS&E and SLA will not approve their submittals.

10. Local agency is responsible for submitting "Request for Authorization" through DLAE to OLP Area Engineers for subsequent phases of work (R/W, construction).

11. OLP Area Engineer, through DLAE, will notify local agency of "Authorization to Proceed" and funds programmed for subsequent phases (R/W, construction). Copies will be forwarded by OLP Area Engineer to SLA for information.

12. Where subsequent "Request for Authorization," or revised funding documents, exceed funds previously programmed for project and/or limits established in the HBRR Guidelines, the OLP Area Engineers may send a copy to SLA for their comments and assistance in determining the appropriateness of the additional costs. This will normally occur only on complex projects.

13. Issues that cannot be resolved by the OLP Area Engineer will be referred to the HBRR Program Manager in OLP, who will review the issues and make the final decision for the project.